

REMARKS/ARGUMENTS

1. The Examiner rejected claims 1-13, 16, 18, 27, 29-35, 38-43, 48-54, 87, and 91 as being anticipated by Muthuswamy alone or in combination with one or more other references.

The Examiner argues that Muthuswamy teaches an anode-supported tubular fuel cell, per claim 32. Applicants respectfully submit, however, that Muthuswamy actually teaches a tubular fuel cell that is supported by a rigid foam material and does not describe or otherwise suggest an anode-supported tubular fuel cell. At column 3, lines 19-21, Muthuswamy states that "one primary advantage of [the rigid foam material] is that it is very rigid, thus providing a solid base to fabricate the fuel cell around." The rigid foam material can either form a porous central core, as in Figure 2, or an outer layer, as in Figure 3. In both cases, the rigid foam material supports the fuel cell.

The embodiment shown in Figure 3 has an inner anode surrounding a hollow core, with the rigid foam material providing "a rigidizing function to the entire structure." (Column 4, lines 48-51). Muthuswamy indicates that the anode is formed in the same manner as described for forming an inner cathode around a rigid core (column 4, lines 40-42), i.e., by coating the anode, such as a woven cloth or paper composed of fibers having a high electrical conductivity, onto another layer (column 3, lines 27-33). The inner anode is not capable of supporting the fuel cell, since the anode is a woven cloth or paper (which would not support the fuel cell) that is coated onto another layer. The rigid foam material is included to "rigidize" the entire structure. Thus, Muthuswamy does not teach or otherwise suggest an anode-supported tubular fuel cell.

2. With regard to Muthuswamy and Kendall, the Examiner argues that "each of the layers of the tubular fuel cells is capable of supporting each other

since the removal of either of the layers would lead to instability.” Applicants respectfully submit that this is simply not true. In Muthuswamy, the anode layer can be removed without instability, because Muthuswamy’s fuel cell includes a rigid foam structure for rigidizing the entire structure (in fact, the fuel cell starts without an anode layer, which is added to the structure). In Kendall, the anode layer can be removed without instability, because Kendall’s fuel cell is supported by the self-supporting extruded electrolyte tube. The present application points out some disadvantages of an electrolyte-supported fuel cell, including inefficiencies due to the thickness of the electrolyte layer.

3. Thus, Applicants respectfully submit that neither Muthuswamy, Kendall, nor the other art of record describes or otherwise suggests an anode-supported tubular fuel cell as presently claimed, so all pending claims are believed to be in a form suitable for allowance. Therefore, the application is believed to be in a condition for allowance. The Applicant respectfully requests early allowance of the application. The Applicant requests that the Examiner contact the undersigned, Jeffrey T. Klayman, if it will assist further examination of this application.

Respectfully submitted,



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